

**Notice of Allowability**

Application No.

10/008,796

Examiner

John S. Chu

Applicant(s)

HAUSSMANN ET AL.

Art Unit

1752

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/03/03.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

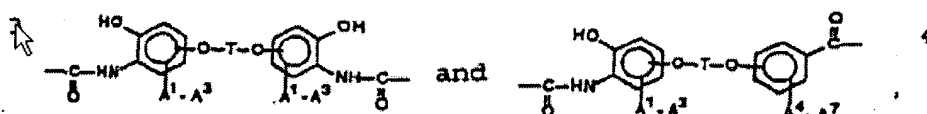
John S. Chu  
Primary Examiner  
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## REASONS FOR ALLOWANCE

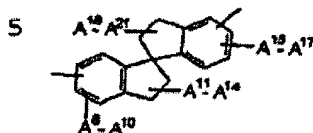
1. The following is an examiner's statement of reasons for allowance: The claimed invention is drawn to the following:

Claim 1 (original). A polybenzoxazole precursor comprising a partial structure selected from the group consisting of



wherein each of  $A^1$  to  $A^7$  is a univalent substituent independently selected from the group consisting of H, F,  $\text{CH}_3$ ,  $\text{CF}_3$ ,  $\text{OCH}_3$ , and  $\text{OCF}_3$ ;

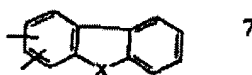
T is a residue selected from the group consisting of



wherein each of  $A^8$  to  $A^{21}$  is a univalent substituent independently selected from the group consisting of H, F,  $\text{CH}_3$ ,  $\text{CF}_3$ ,  $\text{OCH}_3$ , and  $\text{OCF}_3$ ;



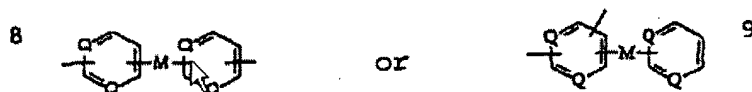
or



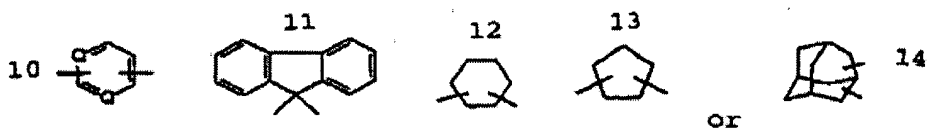
wherein X is selected from the group consisting of  $-\text{CH}_2-$ ,  $-\text{CF}_2-$ ,  $-\text{C}(\text{CH}_3)_2-$ ,  $-\text{C}(\text{CF}_3)_2-$ ,  $-\text{C}(\text{OCH}_3)_2-$ ,  $-\text{C}(\text{OCF}_3)_2-$ , -

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$C(CH_3)(C_6H_5)-$ ,  $-C(C_6H_5)_2-$ ,  $-O-$ ,  $-(NH)-$ ,  $-(N-CH_3)-$  and  $-(N-C_6H_5)-$ ;

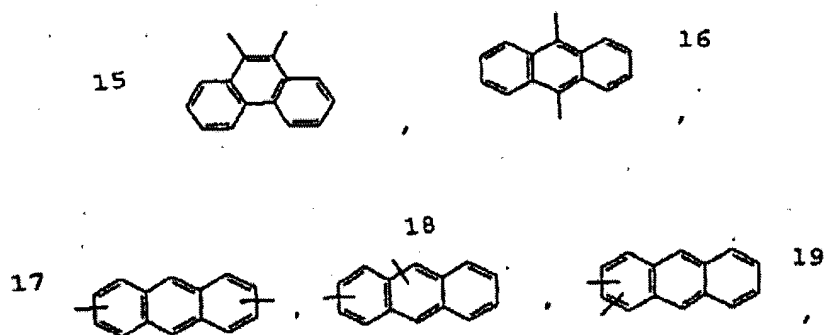


wherein M is selected from the group consisting of residues represented by formulas 10-14

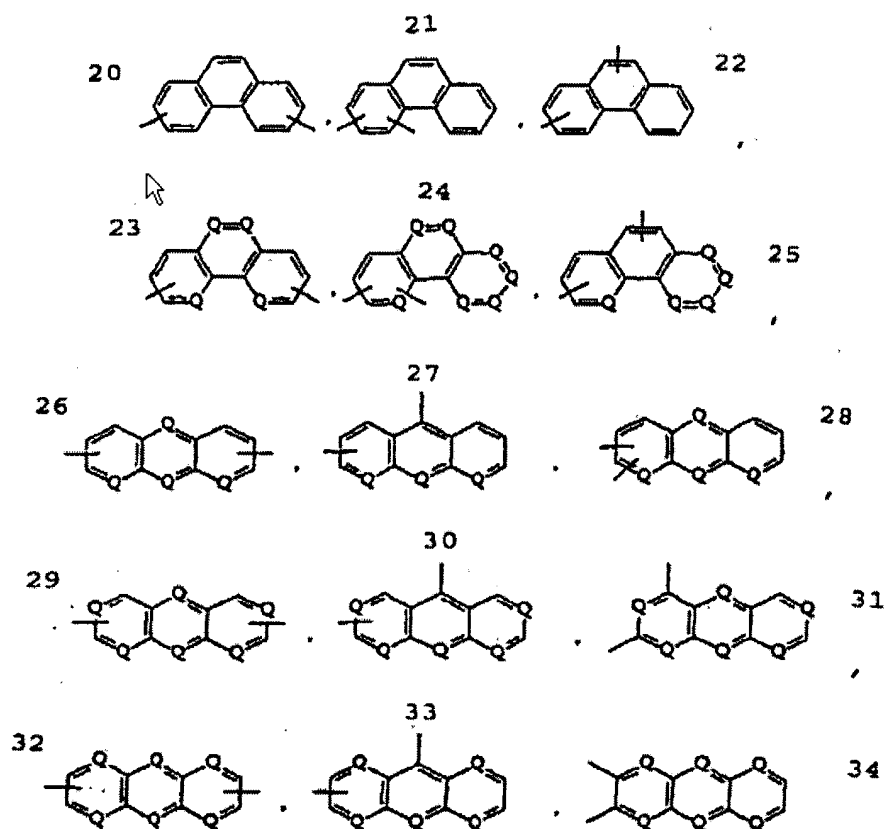


in which Q is selected from the group consisting of C-H, C-F, C-CH<sub>3</sub>, C-CF<sub>3</sub>, C-OCH<sub>3</sub>, C-OCF<sub>3</sub> and N,

and residues represented by formulas 15-34 shown below:



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wherein Q is defined as above, provided that at least one Q signifies N and a maximum of two N atoms are present per ring.

The claims are further drawn to a photoresist solution comprising said polybenzoxazole precursor of claim 1, a diazoketone and an organic solvent.

Claim 10 is drawn to the polybenzoxazole polymer made from the precursor.

Claim 20 is further drawn to a process for preparing a polybenzoxazole precursor.

The closest prior art references to the claimed invention are to EP-905,169 A2 and Ep 905,170 A2. These two references disclose diamine compounds very similar to the claimed diamines used to make the polybenzoxazole precursors, however the "Z" groups in '169 fail to

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teach the claimed "T" groups in the current application. Formulae 8 and 9 defined for the "T" group in claim 1 are not anticipated or rendered obvious by the "Z" groups of '163. The prior art lacks the particular bridging "M" group recited in the application (formula 10-14 of claim 1).

Likewise EP 905,170 A2 teaches a similar polybenzoxazole precursor, however the "Z" groups in '170 are the same as in '163, thus failing to anticipate or render obvious the claimed invention.

Because none of the prior art references of record disclose the claimed invention, claims 1-20 are seen as allowable and passed to issue.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

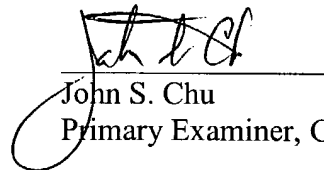
2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. TERAMOTO et al, MERA et al and ROGERS et al are cited of interest to disclose heat-resistant polyamides.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (571) 272-1329. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

The fax phone number for the USPTO is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1700.



John S. Chu  
Primary Examiner, Group 1700

J.Chu  
May 17, 2004